



pmAIT
PRODUCT MANAGER
AUTOMATIC IDENTIFICATION TECHNOLOGY

Passive Tag Update

John Waddick
Strategic Planning, PM AIT

- RFID Policies
- Business Rules
- Responsibilities
- Implementation Timelines
- Army Implementation
- Challenges to Implementation
- Path Ahead/Summary

RFID - What It Is?

Radio Frequency (RF) Is Simply Wireless Technology

- **Active RFID** - Longer range (300 ft + Read, 50+ Write)

- Continuously powered tag
"Data Rich"
- Low-level RF to the tag
\$15.00 Amortized
- High-level RF back to the reader
- Data rich have on-board storage media



Cost ~

- **Passive RFID** - Shorter range (< 12 ft)

- Tags reflect energy from reader
- Tag receives/stores energy to respond
database)
- Needs stronger RF signal from reader
- Low RF strength from tag



"License Plate"
(Requires link to



Cost < \$.50



- **Semi-Passive RFID**

- Similar to passive
- Internal power (battery) for tag circuitry/sensors

Radio Frequency Identification (RFID) is the use of wireless technology to capture and pass information about resources at rest or in motion.

- DoD RFID Policy
 - Initial draft signed by DUSD AT&L 2 October 2003
 - Joint IPT with Services and Service Providers worked the business rules
 - Final signed by DUSD AT&L 30 July 2004
- Policy is a collaboration between DoD and Industry
- Establishes the business rules for RFID use in DoD

DoD RFID Policy

- Logistics Decision Memorandum
 - Signed by DUSD AT&L 30 August 2004
- Result of the 28 August Defense Logistics Board (DLB)
- Expanded Active RF Policy Implementation to all consolidated shipments in DoD
- Limited initial Passive RF Policy Implementation to DLA supply and maintenance depots (1 year) pending cost benefit review by the DLB

- Immediately implement *Active* RFID for all OCONUS Shipments
 - Content level detail on the RFID Tag
 - ‘Tag’ sustainment and ammunition shipping containers and air pallets
 - Unit move equipment
 - Pre-positioned materiel and supplies
 - Program (POM /O&M /AWCF) for RFID operations
 - Develop CONOPS and implementation strategy and procedures
- Encouraged to employ *Active* RF intra-CONUS to support normal operations and training

**Supports
Combatant
Commander
Requirements**

- DoD will be an early adopter of *Passive* RFID
- Publish DFARS Rule requiring *Passive* RFID
 - On solicitations issued after 1 October 2004
 - For delivery after 1 January 2005
- Begin implementing *Passive* RFID - 1 January 2005 (Receipt /Shipping)
- Vendors 'Tag' shipments to DoD
 - Cases
 - Warehouse pallets
 - Unique Identification (UID) packaging
- Funding – RFID is a cost of doing business

Passive RFID Business Rules

- Use Electronic Product Code (EPC) Class 0 and 1 tags until Gen 2 is available (sunset dates for Class 0 and 1, ~ 2 years)
- Use competitive vendors (PM AIT contract) to provide RFID equipment
- RFID will generate transactions of record
- Electronic Data Interchange (EDI) is necessary for data to be resident within DoD data environment to use tag reports
- Vendors will provide Advance Shipping Notices (ASN)
 - Wide area workflow
 - Web-based
 - User defined

EPC – *Electronic Product Code* (EPCGlobal, Inc.)

- Several different constructs
- Proposed Global coding standard developed at MIT AUTO-ID Center
- Uses Binary Numbering System
- Unique product identification - Trillions of non-repeating possibilities

Construct

96 Bits Today --- 256 Bits Tomorrow

0001	0101101	1001000001001100010011100001000100001100	11	001011011111110111000001110
Header		Filter	DODAAC/CAGE	Serial Number
Passive RF Tag	Class 0	96 Bits	Read Only	
Characteristics	Class 1	96 Bits	Write Once	
	<i>Class 1 Gen 2</i>	<i>256 Bits</i>	<i>Read/Write</i>	

The UID data is too large to fit on an EPC Passive RF Tag!

Responsibilities

- DoD Log AIT Office is lead agency for AIT in DoD
 - Establishes and maintains RF Tag formats/standards
 - Coordinates updates to DoD regulations
- PEO EIS, PM AIT is the procurement activity for RFID products and manages the RF-ITV Infrastructure
 - Awards and administers AIT/RFID contracts
 - Manages the Radio Frequency In-Transit Visibility (RF-ITV) infrastructure
 - Programs and manages centralized funding in support of RF-ITV servers
 - Ensures compliance with information assurance and networthiness
 - Assists other AIT/RFID disciplines to include HERO certification and frequency management

- DLA is procurement and single manager for active RF tags
(4 tag management communities; sustainment, ammunition, unit movement, and pre-positioned stocks)
- USTRANSCOM (DoD DPO) provides infrastructure to strategic CONUS/OCONUS aerial and seaports
(includes commercial, if required)
- Services and other supporting agencies program and acquire infrastructure and RF capabilities for their locations

DoD RFID Policy Implementation Timeline

- 31 Jul 04: Services complete Active RF Implementation Plan
- 29 Oct 04: Services complete Passive RF Implementation Plan
- 1 Oct 04: RFID required on solicitations for delivery after Jan 05
- 1 Jan 05: Initial implementation of EPC Passive RF within DoD
 - Class 0 and 1 tags on cases, pallets, packaging for UID items
 - Supply Classes: I (rations), II, VI, IX
 - Locations: Defense Depots San Joaquin and Susquehanna
- 1 Jan 06:
 - Class 0 and 1 tags on cases, pallets, packaging for UID items
 - Class 1 Gen 2 tags (if available)
 - Supply Classes: I, IIIP, IV, V (if HERO), VII, VIII
 - Locations: Maintenance Depots, DLA Distribution Depots

DoD RFID Policy Implementation Timeline (Cont'd.)

- 1 Jan 07: Remaining Classes of Supply except X and all locations begins
- FY07 for RF-capable business processes
 - Only RF-capable peripherals and labels
 - Logistics Automation Systems involved in shipping/receiving/inventory
- Dates TBD
 - Update DoD Supply Chain Integration Manual (DoD 4140.1-R)
 - Update Defense Transportation Regulation (DoD 4500.9-R)
 - Update Military Standard 129 (DoD shipping labels)
 - Managers of Log-Mod Systems update documentation

Army RFID (Draft) Strategy

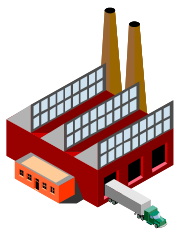
- Immediately expand use of active RFID in support of the Focus Areas
 - SARSS BPS into ~527 sites FY05-FY07 (could be as high as 842)
 - Expand nodal tracking using RFID in support SARSS BPS implementation
 - Expand use of active RF into CONUS and other COCOMs
- Proceed cautiously on passive RFID implementation per DoD RFID Policy
 - Participate in DoD IPT and planning sessions
 - Conduct BCA and explore potential opportunities
 - Monitor progress of the passive RFID technology
 - Blueprint requirements for RFID and EPC in LMP, GCSS-A/T, PLM+ to support SALE
 - Conduct demonstration projects; Class I Combat Feeding; Individual Protective Equipment (IPE)
- POM and resource requirements

Today

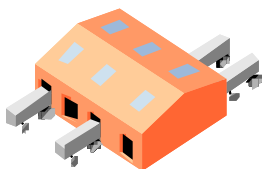
ACTIVE

Future

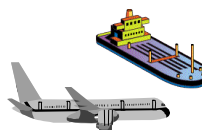
**Manufacturers/
Suppliers**



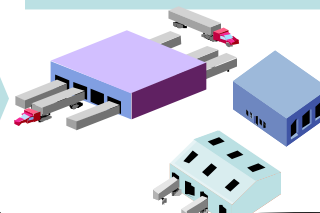
**Distribution
Centers/Depots**



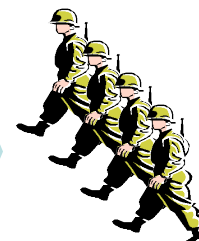
POEs/PODs



**Transportation/Supply/
Theater
Depots/TDCs**



Customers



PASSIV

E

ACTIVE

PASSIV

E

Enables Shipping Node DoD Supply Chain Transportation Receiving Node

- Schedule and funding synchronization
- Communications, data, and metadata
- Maturity of RFID technology
- Tag and hardware standards/interoperability/formats
- Global Spectrum Compatibility
- Current requirements versus future Automated Information Systems (AIS) initiatives
 - Single Army Logistics Enterprise (SALE) fielding
 - Operational Transformation

- OSD RFID policy for Active and Passive Technology integration
- Army participate in joint development of policy, concepts, and implementation strategies for RFID technology
 - Expand Active RFID ITV Architecture – Integrate to support all Combatant Commander AORs (Joint-service/Coalition customers)
 - Seek ‘value’ opportunities for use of Passive RFID in core business processes
- Include AIT/RFID/UID in current and future enterprise AIS developments
- Take an holistic approach -- ensure proper institutionalization

Questions?